	Application No.	Applicant(s)	
Notice of Allowability	09/750,071	BESHAI ET AL.	
	Examiner	Art Unit	
	Anthony T Ton	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *7/6/2004*.

2. ☒ The allowed claim(s) is/are *1,3-18,21-25,28 and 31-34*.

3. ☒ The drawings filed on *27 March 2001* are accepted by the Examiner.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some*   c) ☐ None   of the:

        1. ☐ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____ .

        3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

    * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

    (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached

        1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____ .

    (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of

        Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)

2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)

3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____

4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application (PTO-152)

6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .

7. ☒ Examiner's Amendment/Comment

8. ☒ Examiner's Statement of Reasons for Allowance

9. ☐ Other _____ .

PHIRIN SAM
PRIMARY EXAMINER

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DETAILED ACTION

EXAMINER'S AMENDMENT

1.   The following is an examiner's statement for amending claims 3, 4, 18 and 28, and

canceling claims 26, 27, 29 and 30 as the agreement of Applicants:

Based on a conversation between Examiner **Anthony Ton** and Attorney **Ronald D.**

Faggetter (Registration No. 33,345) on 2/1/2005, 2/2/2005 and 2/3/2005, the Attorney does

agree to allow the Examiner to do an Examiner's statement as the following:

a) **In Claim 3**: Please insert the following words after the words "**master controller**" in

line 1 of this claim:

---for a space switch---

b) **In Claim 4**: Please insert the following words after the words "**master controller**" in

line 2 of this claim:

---for a space switch---

c) **In Claim 18**: Please change the words "**bust transfer requests received in**" in line 6

of this claim as follows:

---bust transfer requests received---

d) **In Claim 28**:

1) Please insert a word "**said**" in between the word "**where**" and the word "**each**"

in line 8 as follows:

---where said each---

2) Please delete the period "." at the end of line 17; then insert the following claimed subject matters after the words "**said burst-transfer schedules**" in the line 17 of the claim:

---;

wherein said burst-transfer schedules are based on a calendar having a predetermined calendar period, where said calendar has been divided into a predetermined number of divisions; and

wherein each of said core nodes includes a master time counter having a predetermined counter period and each of said edges nodes includes a slave time counter having said predetermined counter period, and said process of time locking uses said slave time counter and said master timer counter.---

e) Please cancel **Claims 26, 27, 29** and **30**.

Allowable Subject Matter

2.   The following is an examiner's statement of reasons for allowance:

a) **In Regarding to Claims 1** and **22-24:** The prior arts of record fail to teach a method of controlling a space switch having a plurality of input ports and a plurality of output ports, the method comprising a combination of steps of:

receiving a stream of burst transfer requests;

grouping the burst transfer requests into burst groups according to their corresponding input ports;

generating schedules for the burst transfer requests in an order in which input ports corresponding to the burst transfer requests become unoccupied; and

transmitting the schedules and corresponding burst-transfer requests to a slave controller for the space switch to set up paths through the space switch.

b) **In Regarding to Claim 3:** The prior arts of record fail to teach a space switch master controller for a space switch, the space switch master controller comprising a combination of steps of:

a source interface for receiving a stream of burst transfer requests, each of the burst transfer requests including parameters specifying a requested connection and a duration for the requested connection;

a burst scheduler for generating, in an order in which input ports corresponding to the burst transfer requests become unoccupied, scheduling information for each of the burst transfer requests in the stream based on the parameters; and

a slave controller interface for transmitting instructions to a slave controller for the space switch, where the instructions are based on the scheduling information and cause the space switch to establish a requested connection.

c) **In Regarding to Claim 4:** The prior arts of record fail to teach a computer-readable medium containing computer-executable instructions which, when performed by a processor in a space switch master controller for a space switch, cause the processor to:

receive a stream of burst transfer requests, each of the burst transfer requests including parameters specifying a requested connection and a duration for the requested connection;

generate, in an order in which input ports corresponding to the burst transfer requests

become unoccupied, scheduling information for each of the burst transfer requests based on the

parameters; and

transmit the scheduling information to a slave controller of the space switch.

d) **In Regarding to Claim 5:** The prior arts of record fail to teach a method of

scheduling, the method comprising a combination of steps of:

for each burst transfer request of a plurality of burst transfer requests received from the

next-available input port, where the each burst transfer request includes a duration of a burst and

a destination of the burst:

determining a time gap, where the time gap equals a time index at which a

corresponding output port will become available minus an input time index;

selecting a particular burst transfer request from the plurality of burst transfer requests

where the particular burst transfer request has a minimum time gap; and

determining a scheduled time index, where the scheduled time index equals the time

index at which the corresponding output port is available if the time gap is positive, otherwise

the scheduled time index equals the input time index.

e) **In Regarding to Claims 6-16:** The prior arts of record fail to teach a method of

generating scheduling information, the method comprising a combination of steps of:

for each burst transfer request of a plurality of burst transfer requests received in relation

to a next-available input port, and where the each burst transfer request includes an identity of a

burst and a destination of the burst:

determining a time gap, where the time gap is different between:

a time index at which the next-available input port will become available;

and

a time index at which a corresponding output port will become available;

selecting one of the plurality of burst transfer requests as a selected burst transfer request,

where the selected burst transfer request has a minimum time gap of the plurality of burst

transfer requests; and

selecting a scheduled time index, where the scheduled time index is one of the time index

at which the next-available input port is available and the time index at which the corresponding

output port is available.

f) **In Regarding to Claim 17:** The prior arts of record fail to teach a burst scheduler, the

burst scheduler comprising a processor operable to a combination of steps of:

for each burst transfer request of a plurality of burst transfer requests received from a

next-available input port, and where the each burst transfer request includes a duration of a burst

and a destination of the burst:

determining a time gap, where the time gap equals a time index at which a

corresponding output port becomes available minus an input time index;

select a particular one of the plurality of burst transfer requests, where the particular one

of the plurality of burst transfer requests has a minimum time gap; and

determine a scheduled time index, where the scheduled time index equals the input time

index when the time gap is negative and equals the time index at which the corresponding output

port is available when the time gap is not negative.

g) **In Regarding to Claim 18:** The prior arts of record fail to teach a computer-readable medium containing computer-executable instructions which, when performed by a processor in a burst scheduler, cause the processor to:

for each burst transfer request of a plurality of burst transfer requests received from a next-available input port, and where the each burst transfer request includes a duration of a burst and a destination of the burst:

> determine a time gap, where the time gap equals a time index at which a
>
> corresponding output port becomes available minus an input time index;

select a particular one of the plurality of burst transfer requests, where the particular one of the plurality of burst transfer requests has a minimum time gap; and

> determine a scheduled time index, where the scheduled time index equals the time index

at which the corresponding output port is available, if the time gap is positive, and equals the input time index if the time gap is not positive.

h) **In Regarding to Claim 21:** The prior arts of record fail to teach a data network, the data network comprising a combination of steps of:

a master controller for one space switch in one core node for:

> receiving a stream of burst transfer requests, each of the burst transfer requests

including parameters specifying a requested connection and a duration for the requested connection;

> generating, in an order in which input ports corresponding to the burst transfer

requests become unoccupied, scheduling information for each of the burst transfer

requests based on the parameters; and

transmitting the scheduling information to a slave controller of the one space

switch.

i) **In Regarding to Claim 25:** The prior arts of record fail to teach a master controller of

a space switch, the space switch having a plurality of input ports and a plurality of output ports,

the master controller comprising a combination of steps of:

receive a stream of burst transfer requests;

group the burst transfer requests into burst groups, each of the burst groups correspond to

one of the input ports;

generate schedules for the burst transfer requests in an order in which input ports

corresponding to the burst transfer requests become unoccupied; and

transmitting the schedules and corresponding burst-transfer requests to a slave controller

for the space switch to set up paths through the space switch.

j) **In Regarding to Claims 28** and **31-34:** The prior arts of record fail to teach a burst-

switching network, the burst-switching network comprising a combination of steps of:

a plurality of core nodes, each of the plurality of core nodes including a bufferless space

switch;

a plurality of edge nodes, each having:

where each of the plurality of edge nodes is adapted to perform a process for

time-locking to each of at least one of the core nodes; and

wherein the each of the plurality of edge nodes is adapted to:

send a stream of burst-transfer requests to a selected core node of the at

least one of the core nodes, where each burst-transfer request of the stream

of burst-transfer requests corresponds to a burst having a duration below a

specified limit; and

wherein each of the core nodes includes a master time counter having a predetermined

counter period and each of the edges nodes includes a slave time counter having the

predetermined counter period, and the process of time locking uses the slave time counter and

the master timer counter.

3.   Any comments considered necessary by applicant must be submitted no later than the

payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for

Allowance."

Examiner Information

4.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to **Anthony T Ton** whose telephone number is **571-272-3076**. The

examiner can normally be reached on M-F: 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, **Chau Nguyen** can be reached on **571-272-3126**. The fax phone number for the

organization where this application or proceeding is assigned is **703-872-9306**.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

by :_____

Anthony T. Ton
Patent Examiner
February 03, 2005

PHIRIN SAM
PRIMARY EXAMINER